



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAVID P. LITTELL
COMMISSIONER

Central Maine Medical Center)
Androscoggin County)
Lewiston, Maine)
A-387-71-J-A)
Departmental
Findings of Fact and Order
Air Emission License

After review of the air emissions license amendment application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

1. Central Maine Medical Center (CMMC) of Lewiston, Maine was issued Air Emission License A-387-71-I-R/A on October 16, 2006, permitting the operation of emission sources associated with their health care facility.
2. CMMC has requested an amendment of their air emissions license to include the retrofit of the facility's currently licensed Boilers #1 and #2. The retrofit will allow the boilers to fire natural gas as well as #6 fuel oil as currently licensed.

B. Emission Equipment

CMMC is amending the facility's air emission license to retrofit the following units:

Fuel Burning Equipment

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Maximum Firing Rate</u>	<u>Stack #</u>
Boiler #1	25	#6 Fuel Oil, 0.7% Or Natural Gas	167 gal/hr	1
Boiler #2	25	#6 Fuel Oil, 0.7% Or Natural Gas	167 gal/hr	1

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 760-3143

C. Application Classification

The modification of a minor source is considered a major modification based on whether or not expected emission increases exceed the "Significant Emission Levels" as defined in the Department's regulations. The emission increases are determined by subtracting the current licensed emissions preceding the modification from the maximum future licensed allowed emissions, as follows:

<u>Pollutant</u>	<u>Current License</u> <u>(TPY)</u>	<u>Future License</u> <u>(TPY)</u>	<u>Net Change</u> <u>(TPY)</u>	<u>Sig. Level</u>
PM	7.5	16.5	9.0	100
PM ₁₀	7.5	16.5	9.0	100
SO ₂	44.3	44.3	0.0	100
NO _x	43.9	47.6	3.7	100
CO	7.8	27.3	19.5	100
VOC	2.9	3.8	0.9	50

The retrofit of the two boilers will not result in a significant emissions increase of any regulated pollutant. Therefore, this application is considered a minor modification of a minor source and has been processed as such.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (last amended December 1, 2005). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emission from the source being considered; and
- the economic feasibility for the type of establishment involved.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 CMR 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

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B. Amendment Description

CMMC's current air emission license allows for the operation of Boilers #1, #2 and #3 firing #6 fuel oil with a sulfur content of no greater than 0.7% sulfur by weight. CMMC's Boiler #3 is currently permitted to fire natural gas as well as #6 fuel oil. CMMC has applied to amend the facility's current air emission license to reflect the retrofit of Boilers #1 and #2 with new burners that allow the boilers to fire natural gas (NG) as well as #6 fuel oil as currently licensed. The retrofit will result in a heat input capacity for each boiler of 25 MMBtu/hr.

CMMC's current air emission license establishes an annual #6 fuel oil restriction of 800,000 gallons per year (gal/yr) to be fired in Boilers #1, #2 and #3. CMMC has requested to continue to be subject to this restriction. CMMC has also requested that this amendment allow unlimited natural gas use in Boilers #1, #2 and Boiler #3.

Boilers #1 and #2 have maximum heat input capacities of greater than 10 MMBtu/hr and both boilers were manufactured in 1969. Air Emission License A-387-71-I-R/A established that prior to this retrofit these boilers were not subject to EPA New Source Performance Standards (NSPS) Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units applicable to boilers with a heat input of greater than 10 MMBtu/hr and manufactured after June 9, 1989* (40 CFR Part 60 Subpart Dc). As per 40 Part 60 Subpart Dc, a steam generating unit that has reconstruction after June 9, 1989 is subject to Subpart Dc. Under 40 CFR 60.15, "Reconstruction" is defined as the replacement of components at an existing facility to the extent that: (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility; (2) It is technologically and economically feasible to meet the applicable standards set forth in this part. As the retrofit of Boilers #1 and #2 will cost approximately \$280,000 and the cost of fully replacing the two boilers with like boilers would cost approximately \$1,800,000, the Department determined that Boilers #1 and #2 will not become subject to 40 CFR Part 60, Subpart Dc as a result of the retrofit.

As established in previous license for CMMC, in order to meet Maine Ambient Air Quality Standards (MAAQS), CMMC's previous license established a combined firing rate for Boilers #1, #2 and #3 of no greater than 200 gal/hr of #6 fuel oil at any one time. During periods of start-up, it is necessary to run the boiler units at their maximum fuel burning capacities and if all the boilers experience a start-up at the same time, the resulting fuel firing rate for that period would be approximately 360 gal/hr, exceeding the 200 gal/hr limit. For this reason, CMMC may demonstrate compliance with the 200 gal/hr limit by averaging the firing rate over a 3-hour period.

A summary of the BACT analysis for CMMC's Boilers is as follows:

1. CMMC shall continue to be subject to an annual #6 fuel oil restriction of no greater than 800,000 gal/yr based on a twelve-month rolling total. Emissions calculations for periods when natural gas is fired were determined assuming 8760 hrs/yr firing of natural gas.
2. *Low Sulfur Fuel* 06-096 CMR 106 (last amended July 4, 1999) regulates fuel sulfur content, however in this case a BACT analysis for SO₂ determined a more stringent limit of 0.7% was appropriate and shall be required.
3. *Fuel Burning Equipment Particulate Emission Standard* 06-096 CMR 103 (last amended November 3, 1990) regulates PM emission limits, however, in this case a BACT analysis determined that a PM restriction of 0.12 lb/MMBtu when firing #6 fuel oil and 0.05 lb/MMBtu when firing natural gas is appropriate and will be required. The PM₁₀ limits are derived from the PM limits.
4. NO_x, CO, and VOC emission limits for periods when #6 fuel oil is fired were calculated based upon AP-42 data dated 9/98 for *Fuel Oil Combustion*.
5. SO₂, NO_x, CO, and VOC emission limits for periods when natural gas is fired were calculated based upon AP-42 data dated 7/98 for *Natural Gas Combustion*.
6. Visible emissions from each stack are subject to *Visible Emissions Regulation*, 06-096 CMR 101 (last amended May 18, 2003).
 - a. Visible emissions from Stack #1, during periods when only one of the three boilers (Boilers #1, #2 and #3) is operational and is firing #6 fuel oil, shall not exceed 20% opacity on a 6-minute block average except, for no more than one 6-minute block average in a 3-hour period.
 - b. Visible emissions from Stack #1, during periods when any combination of Boilers #1, #2 and #3 are operating and firing #6 fuel oil, shall not exceed 30% opacity on a 6-minute block average, except for no more than two 6-minute block averages in a continuous 3-hour period.
 - c. Visible emissions from Stack #1, during periods when Boilers #1, #2 and #3 are operating alone or in any combination and are firing natural gas, shall not exceed 10% opacity on a 6-minute block average.

C. Annual Emission Statement

The retrofit to Boilers #1 and #2 results in increases in emissions of several of the criteria pollutants. As a result of PM, SO₂, and NO_x emissions increasing to greater than the applicability thresholds of Maine's rule *Emission Statements*, 06-096 CMR 137 (last amended July 6, 2004), CMMC shall be subject to 06-096 CMR 137 and shall submit annual emissions statements as required by this rule.

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D. Annual Emission Restrictions

CMMC shall continue to be restricted to the following annual emissions, based on a twelve-month rolling total:

- CMMC is subject to a restriction for Boilers #1, #2 and #3 of firing no greater than 800,000 gal/yr of #6 fuel oil based on a twelve-month rolling total.
- Annual emissions calculations for the CMMC boilers are based on the worst case scenario of firing either natural gas for 8760 hrs/yr or firing maximum of 800,000 gal/yr of #6 fuel oil.

Total Allowable Annual Emission for the Facility
(used to calculate the annual license fee)

Pollutant	Tons/Year		
	Boilers	Diesels	Total
PM	15.7	0.8	16.5
PM ₁₀	15.7	0.8	16.5
SO ₂	44	0.3	44.3
NO _x	25.7	21.9	47.6
CO	21.5	5.80	27.3
VOC	1.4	2.4	3.8

III. AMBIENT AIR QUALITY ANALYSIS

According to the Maine's rule *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (last amended December 24, 2005), the level of air quality analyses required for a minor source shall be determined on a case-by case basis. Based on the information available in the file, and the similarity to existing sources, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source. Based on the total facility emissions, CMMC is below the emissions level required for modeling and monitoring.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

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The Department hereby grants Air Emission License amendment A-387-71-J-A subject to the conditions found in Air Emission License A-387-71-I-R/A and the following conditions:

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

The following condition shall replace Condition (16) in Air Emission License A-387-71-I-R/A:

(16) Boilers #1, #2 and #3

- A. CMMC shall be restricted to firing a combined total of no greater than 800,000 gallons per year of #6 fuel oil in the facility's boilers, based on a twelve-month rolling total. CMMC shall be permitted to fire natural gas in Boilers #1, #2 and #3. [06-096 CMR 115, BACT, BPT]
- B. CMMC shall be restricted to firing only #6 fuel oil with a sulfur content of no greater than 0.7% sulfur by weight in the facility's boilers.
[06-096 CMR 115, BPT]
- C. CMMC shall maintain a record of fuel use for the boilers, which shall include fuel purchase receipts indicating the quantity of fuel purchased and supplier certification indicating sulfur content of the purchased fuel. The fuel record shall be maintained on a monthly as well as the twelve-month rolling total basis. [06-096 CMR 115, BPT]
- D. Emissions from Boilers #1, #2 and #3 each shall not exceed the following:

Equipment		PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Boiler #1	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	3.2	3.2	19.8	9.9	0.9	0.2
Boiler #2	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	3.2	3.2	19.8	9.9	0.9	0.2
Boiler #3	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	1.1	1.1	6.6	3.3	0.3	0.07

- Hourly emissions limits are based on the worst case scenario of firing either natural gas #6 fuel oil
[06-096 CMR 115, BACT, BPT]

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E. CMMC shall limit the firing rate in Boilers #1, #2 and #3 such that the combined firing rate of the three boilers does not exceed 200 gal/hr based on a 3-hour rolling average. Compliance with this limit shall be demonstrated through the use of fuel flow meters that monitor the fuel firing rate to each of the three boilers. [06-096 CMR 115, BPT]

F. Visible Emissions

1. Visible emissions from Stack #1, during periods when only one of the three boilers (Boilers #1, #2 and #3) is operational and is firing #6 fuel oil, shall not exceed 20% opacity on a 6-minute block average except, for no more than one 6-minute block average in a 3-hour period.
[06-096 CMR 101]
2. Visible emissions from Stack #1, during periods when any combination of Boilers #1, #2 and #3 are operating and firing #6 fuel oil, shall not exceed 30% opacity on a 6-minute block average, except for no more than two 6-minute block averages in a continuous 3-hour period.
[06-096 CMR 101]
3. Visible emissions from Stack #1, during periods when Boilers #1, #2 and #3 are operating alone or in any combination and are firing natural gas, shall not exceed 10% opacity on a 6-minute block average.
[06-096 CMR 101]

The following are new conditions to Air Emission License A-387-71-I-R/A:

(20) CMMC shall keep a copy of this order on site at the facility and have the boiler operator(s) be familiar with the terms of this order. [06-096 CMR 115, BPT]

(21) Annual Emission Statement

In accordance with Emissions Standards, 06-096 CMR 137 (last amended July 6, 2004), the licensee shall annually report to the Department the information necessary to accurately update the State's emission inventory by means of:

- 1) A computer program and accompanying instructions supplied by the Department;
Or
- 2) A written emission statement containing the information required in 06-096 CMR 137.

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Reports and questions should be directed to:

Attn: Criteria Emission Inventory Coordinator
Maine DEP
Bureau of Air Quality
17 State House Station
Augusta, Maine 04333-0017

Phone: (207) 287-2437

The emission statement must be submitted by July 1 or as otherwise specified in
06-096 CMR 137.

DONE AND DATED IN AUGUSTA, MAINE THIS 15th DAY OF October 2008.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:

James P. Bruckner
DAVID P. LITTELL, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

This Amendment shall expire concurrently with Air Emission License A-387-71-I-R/A.

Date of initial receipt of application: August 28, 2008

Date of application acceptance: September 17, 2008

Date filed with the Board of Environmental Protection: _____

This Order prepared by, Peter G. Carleton, Bureau of Air Quality

